DIAGNOSTIC SYSTEMS AND METHODS FOR PREDICTIVE CONDITION MONITORING

ABSTRACT

A system for empirically diagnosing a condition of a monitored system. Estimates of monitored parameters from a model of the system provide residual values that can be analyzed for failure mode signature recognition. Residual values can also be tested for alert (non-zero) conditions, and patterns of alerts thus generated are analyzed for failure mode signature patterns. The system employs a similarity operator for signature recognition and also for parameter estimation. Failure modes are empirically determined, and precursor data is automatically analyzed to determine differentiable signatures for failure modes.

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